

CLAIMS

The following listing of claims replaces all prior versions and listings of claims in the above-referenced application:

1 1. (Currently amended) A rate adaptive system for optical
2 communication networks comprising:

3 a plurality of optical transceivers capable of transmitting and receiving optical
4 signals at a plurality of rates to each other, and

5 an optical fibre linked to said optical transceivers, said system configured to
6 cause said optical transceivers to transmit and receive optical signals at an initial rate
7 and to adapt said initial rate based upon an error condition responsive to an optical
8 signal parameter by causing said optical transceivers to transmit and receive at a
9 different rate, wherein ~~the error condition comprises one of a code word violation and~~
10 ~~an optical modulation amplitude~~ a rate of data being forwarded per unit time is
11 adjusted by inserting invalid data which can be identified and ignored by a
12 downstream process.

1 2. (Previously presented) The system of claim 1, wherein said error
2 condition is a failure to synchronize a received signal.

1 3. (Previously presented) The system of claim 1, wherein said system
2 is further configured to calculate an error coefficient based on said received signals,
3 and said error condition comprise said error coefficient exceeding a predefined range.

1 4. (Previously presented) The system of claim 1, wherein said initial
2 rate is lowered according to predefined percentages of said initial rate in response to
3 said error condition.

1 5. (Previously presented) The system of claim 4, wherein said
2 percentages are selected from the group of 75, 50 and or 25 percent of said initial rate.

1 6. (Previously presented) The system of claim 1, wherein said initial
2 rate is 10 Gb/s.

1 7. (Previously presented) The system of claim 1, wherein said system
2 is configured to operate in an optical Ethernet network.

1 8. (Previously presented) The system of claim 1, wherein said system
2 is further configured to notify a network operator in the event of said error condition.

1 9. (Currently amended) A rate adaptive method for operating an
2 optical communication network, comprising:
3 transmitting data at an initial rate,
4 receiving said data at said initial rate,
5 evaluating said data responsive to a parameter observed on an optical signal to
6 determine if an error condition exists, ~~wherein the error condition comprises one of a~~
7 ~~code word violation and an optical modulation amplitude~~, and
8 adapting said rate based upon said evaluation by transmitting and receiving at
9 a different rate, wherein transmitting and receiving comprises inserting invalid data
10 which can be identified and ignored by a downstream process.

1 10. (Previously presented) The method of claim 9, wherein adapting
2 said rate comprises lowering said initial rate according to predefined percentages of
3 said initial rate in response to said error condition.

1 11. (Previously presented) The method of claim 10, further comprising
2 notifying a network operator in the event of said error condition.

1 12. (Currently amended) An optical transceiver module for a rate
2 adaptive system for optical communication networks comprising
3 means for transmitting an optical signal via an optical fibre at a plurality of
4 optical signal rates,

5 means for receiving an optical signal transmitted at said plurality of optical
6 signal rates,

7 means for determining an error condition responsive to a parameter derived
8 from observation of the optical signal, ~~wherein the error condition comprises one of a~~
9 ~~code word violation and an optical modulation amplitude~~, and

10 means for adapting an optical signal transmission rate ~~based upon the error~~
11 ~~condition~~ by transmitting and receiving at a different rate, wherein transmitting and
12 receiving comprises adjusting ratios in a phase-locked loop circuit.

1 13. (Currently amended) A rate adaptive method for operating an
2 optical communication network, comprising:

3 transmitting test signals at an initial rate,

4 receiving said test signals at said initial rate,

5 evaluating said test signals to determine if an error condition exists, ~~wherein~~
6 ~~the error condition comprises one of a code word violation and an optical modulation~~
7 ~~amplitude~~, and

8 adapting said rate based upon said ~~evaluation~~ evaluating by transmitting and
9 receiving at a different rate, wherein transmitting and receiving comprises reducing
10 the number of active channels in a multiple channel parallel interconnect.